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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of)
)
Advanced Television Systems)
and Their Impact upon the)
Existing Television Broadcast Service)

MM Docket No. 87-268

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COMMENTS OF
THE ASSOCIATION OF AMERICA'S PUBLIC TELEVISION STATIONS
AND THE PUBLIC BROADCASTING SERVICE

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Summary of Argument

Public Television is gratified that the Commission has proposed an allocations approach that pairs DTV and NTSC channels based on licensees' current transmitter sites. This approach will afford noncommercial television stations a realistic opportunity to transition to DTV service and use the power of this new technology to advance their noncommercial educational mission. Public Television also endorses in principle the Comments filed by the Broadcasters, but does not endorse adoption of the Modified Table attached to those Comments. That table has not been sufficiently refined to incorporate certain basic principles that are necessary to protect public television stations, particularly minimum power values. In these Comments, Public Television focuses on those allocations principles that are particularly important to public television stations. Its proposals are made with a view towards optimizing DTV coverage, reducing the cost to stations of reaching the maximum number of viewers, and minimizing disruption of noncommercial television service during the transition to digital television.

It is critical to noncommercial stations, most of which operate on UHF channels, that the Commission couple the coverage replication principle -- the central feature of its allotment plan -- with a coverage maximization principle. This turning point in the development of broadcast television gives the Commission an opportunity that it may never have again to alleviate the historic UHF/VHF coverage inequity. It should seize that opportunity by (1) incorporating in the table minimum power for those stations that currently operate at low power levels, (2) affording DTV licensees latitude to expand their coverage to that which they could attain operating with the maximum height and power allowed for their NTSC facilities,

provided they do not cause additional interference, (3) protecting that larger area from proposals to add DTV channels to the table of allotments, and (4) permitting DTV stations to use boosters or translators to serve any portion of their maximum coverage area. These measures will lessen the current coverage disparity between UHF and VHF stations, allow stations to cover their markets more efficiently, and bring the benefits of digital television to a greater number of viewers.

Public Television supports the Commission's ultimate objective of increasing spectrum efficiency by concentrating DTV service in a narrower spectrum band than is currently allocated to broadcast television. But it does not believe that the public interest would be served by attempting to pack as many NTSC and DTV channels as possible into the spectrum below channel 60 during the DTV transition period. By using the full spectrum during the transition, the Commission will (1) reduce interference to both NTSC and DTV stations, (2) afford opportunities for maximization of DTV coverage, (3) minimize disruption of existing translator service, (4) afford both NTSC and DTV licensees greater flexibility to modify their facilities during this challenging period, and (5) diminish pressure to delete noncommercial vacant allotments. Moreover, at the end of the transition, channels outside a core region can be cleared of broadcast users and will then be far more valuable for other uses than they would be if reallocated piecemeal during the transition period under any of the proposed spectrum plans.

Given the long-standing and important public policy of maintaining the structural integrity of reserved noncommercial spectrum, the Commission should not delete vacant noncommercial NTSC channels unless it concludes, on the basis of engineering analysis, that

there is no other way to accommodate all eligible broadcasters with DTV channels. If there is no practical alternative to deletion, the Commission should replace all deleted noncommercial channels with substitute DTV channels, either in the initial table of allotments or at the end of the transition period.

Noncommercial translators play a vital role in filling in white areas within public television stations' contours and bringing public television service to areas that are rural or surrounded by rough terrain. There are a number of measures that the Commission should take to minimize disruption of noncommercial translator service during the DTV transition. The most important of these is adoption of a DTV allotment table that utilizes the full spectrum; this will minimize displacement of translators and preserve more opportunities for those translators that are displaced to relocate to other channels. In addition, the Commission should (1) permit translators to operate on their current channels until a new user is ready to operate on that channel or another channel that would be subject to interference by the translator's operations; (2) permit displaced translators to file for replacement channels without being subject to competing applications; and (3) require new non-broadcast users of any reallocated spectrum to compensate displaced translators for their moving costs. The Commission should also give noncommercial translator applicants a preference over commercial translators and low power television applicants in applying for vacant digital channels reserved for noncommercial use for a period ending one year after DTV stations are required to commence operation. If the displaced noncommercial translator provided noncommercial television service to an otherwise unserved area, the translator applicant

should be afforded a preference in applying for any digital allotment until one year after the end of the DTV transition period.

We are entering a digital world. Public Television urges the Commission to move forward expeditiously to adopt a table of digital allotments and rules governing the new DTV service so that broadcasters, like their video competitors, can bring the benefits of digital technology to their viewers. As providers of the only noncommercial video service in the nation, Public Television and their member stations are committed to using that technology to bring a wealth of new and enhanced educational and cultural services to the American public.

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**COMMENTS OF
THE ASSOCIATION OF AMERICA'S PUBLIC TELEVISION STATIONS
AND THE PUBLIC BROADCASTING SERVICE**

The Association of America's Public Television Stations ("APTS") and the Public Broadcasting Service ("PBS") (collectively referred to as "Public Television") submit these comments in response to the Commission's Sixth Further Notice of Proposed Rule Making, released August 14, 1996 ("Sixth Notice") in the above-captioned proceeding.

I. Introduction

In comments filed earlier in this proceeding,^{1/} Public Television has shared its vision of the enormous potential of digital technology to enhance noncommercial programming and expand dramatically the range of educational programs and services offered by noncommercial stations in response to local needs.^{2/} Public Television is gratified that the allocation approach proposed by the Commission in the Sixth Notice would afford

^{1/} Public Television has participated in all phases of this proceeding. In addition to their numerous comments filed individually and jointly, APTS and PBS also joined in the comments filed by a broad coalition of terrestrial broadcast stations and networks (the "Broadcasters") at earlier stages of this proceeding. The Comments filed by the Broadcasters today in response to the Sixth Notice are referred to herein as the "Broadcasters' Comments."

^{2/} See, e.g., Public Television Comments filed November 20, 1995.

noncommercial stations a real opportunity to transform that vision into a reality, and wholeheartedly supports the central features of that approach.

Public Television endorses in principle the Comments filed by the Broadcasters in this proceeding, but does not endorse adoption of the Modified Table attached to those comments. Public Television believes that the Modified Table has not been sufficiently refined to reflect basic principles that are necessary to protect public television stations' interests, particularly incorporation of minimum power values.^{3/}

In these Comments, Public Television focuses on the allocation principles and proposals that are particularly important to public television stations. The proposals below are made with a view towards optimizing the coverage of DTV stations, reducing the cost to stations of reaching the maximum number of viewers, and minimizing disruption of noncommercial service during the transition to digital television.

^{3/} See Section II.A.2 *infra*. Adjustments to the Broadcasters' proposed table are also necessary, as the Broadcasters acknowledge, to make various corrections, to modify channels near the Mexican and Canadian borders after coordinating with those countries, to incorporate analog allotments for pending applications, and for a number of other reasons. See Broadcasters' Comments, Section III.A. A list of corrections to the NTSC database for public television stations is attached hereto as Exhibit 1. Those corrections should be reflected in the table of digital allotments.

II. Digital Allocations

A. The Commission's Approach to DTV Allocations Is Basically Sound But the Commission Should Do More To Rectify the Historic Coverage Disparity Between VHF and UHF Stations.

1. Public Television Strongly Endorses The Commission's Paired Channel Approach.

Public Television strongly supports the Commission's proposal to adopt a table of digital allotments that pairs DTV channels with NTSC channels based on the NTSC licensee's current transmitter site and that replicates, to the extent feasible, the current service area of the station. The advantages of this approach over the "first-come, first-serve" approach that the Commission proposed earlier are overwhelming, particularly for public television stations.

As Public Television has previously noted, the pairing of channels will avoid a "first-come, first-served" spectrum free-for-all that would place noncommercial stations at a severe disadvantage to their commercial counterparts.^{4/} Noncommercial stations will need substantial lead time to raise the funds necessary to build DTV facilities, since they do not have a profit stream from which they can finance DTV construction and cannot arrange private institutional financing in most cases.^{5/} As the Commission has acknowledged, they must rely on governmental appropriations, foundation grants, and corporate and viewer donations to fund capital improvement and new facilities.^{6/} When funding is to come from

^{4/} See, e.g., Comments of Public Television on Further Notice of Proposed Rulemaking, July 17, 1992.

^{5/} See id. at 6-7.

^{6/} See Fourth Further Notice of Proposed Rule Making and Third Notice of Inquiry, 10 FCC Rcd 10540, at ¶ 73 (1995); Memorandum Opinion and Order/Third Report and Order/Third Further Notice of Proposed Rule Making, 7 FCC Rcd 6924, 6947-48 (1992).

private sources, they need substantial time to design and implement a capital campaign.

When funding is to come from the government, they need time to educate legislators of the need for funding and must wait for legislative bodies -- many of which meet only biennially -- to appropriate funds. Thus, noncommercial stations would be at a substantial competitive disadvantage in any "first-come, first-served" allocation scheme. The channel pairing approach now proposed by the Commission will give noncommercial stations a chance to arrange for funding of DTV facilities without losing out in a race for spectrum.

Public Television also believes that the pairing of specific DTV channels with NTSC channels will materially assist noncommercial stations in raising funds from private and public sources. The ability to point to a specific digital channel that has been set aside for its use will help a noncommercial station convince its supporters that DTV service is a real and immediate opportunity to be seized by the station rather than a speculative gamble. The pairing of specific DTV channels with NTSC channels will also make it easier for stations to plan and estimate the cost of their transition to digital television.

In addition to enhancing the prospects that public television stations will obtain suitable DTV channels, the pairing of channels will make it possible for many licensees to operate their DTV facilities from their current transmitter sites. Co-location of NTSC and DTV facilities will permit stations to realize cost savings both in converting to digital transmission and in operating dual facilities during the transition period. This may be crucial to the ability of many financially strapped noncommercial stations to construct and operate DTV stations in the near-term.

Co-location of DTV and NTSC transmitter sites will also facilitate replication of NTSC service areas, thereby assuring continued service to current viewers and minimizing viewer confusion during the transition to DTV. While replication of current coverage is undoubtedly important to all stations, it is particularly important to state public television networks, which typically serve their entire state without regard to population densities. These networks have carefully selected the transmitter sites, power and antenna heights of each of their stations so as to fulfill their coverage mandate in the most efficient manner with the fewest number of transmitter sites. The pairing of channels based on current transmitter sites will maximize the opportunities for co-location of NTSC and DTV transmitter sites and permit state licensees to replicate their carefully designed networks of stations.^{7/}

In short, the allotment/assignment approach now proposed by the Commission greatly enhances the prospects that noncommercial television stations will be able to realize the enormous promise of digital technology "not only to entertain our families, but also to educate our children, participate in political debate, gain knowledge, enrich our lives. . . ."^{8/}

^{7/} Before it adopts the final table of allotments, the Commission should take steps to rectify those few situations where a licensee's DTV coverage would fall far short of replicating its analog service area. The proposed DTV allotment to noncommercial station KNPB, Reno, Nevada, for example, would result in a severe short-fall in replication. That station provides the sole public television signal for its viewers. The Commission proposes a DTV allotment on Channel 43 that would result in a coverage loss of 37.5% of the current service area and 16.5% of the currently served population. This service reduction would adversely affect over-the-air viewers, cable headend reception, and utilization of the signal by schools at the periphery of the service area.

^{8/} Speech of Chairman Reed Hundt to Industry Leadership Conference, Information Technology Association of America, Nashville, Tennessee, October 9, 1995.

2. The Commission Should Adhere to Its Proposal to Incorporate Minimum Power Values in the Table of Digital Allotments.

The Commission's proposed table of digital allotments specifies an effective radiated power and antenna height above average terrain for each DTV station. The antenna height specified for each station is the same as that of the associated NTSC station, and the power is calculated in most cases to provide service replication. For each NTSC station that currently operates at a power below a certain minimum threshold, however, the Commission established a minimum ERP value to "ensure that smaller stations, if they desire, are able to expand their existing coverage as they transition to DTV."^{9/}

Public Television strongly supports the incorporation of minimum power values in the table of digital allotments.^{10/} As the Commission acknowledges in the Sixth Notice, the establishment of minimum power levels will permit existing stations with very small coverage areas not only to replicate their existing coverage but also to improve their coverage to some extent.^{11/} This will narrow the coverage gap between stronger and weaker stations and ameliorate the VHF/UHF coverage disparity.

^{9/} Sixth Notice at ¶ 94. The Commission's draft table proposes the following minimum ERP values: 1 kw for lower VHF channels, 3.2 kw for upper VHF channels, and 50 kw for UHF channels. Id.

^{10/} In this respect, Public Television departs from the Broadcasters' Comments, which oppose incorporating minimum power requirements in the table of digital allotments. See Broadcasters' Comments, Section IV.A. Public Television will work with the Broadcasters, who endorse a minimum service area principle, toward the goal of submitting a joint recommendation to the Commission, in late filed comments, on this important issue.

^{11/} Id.

In addition, incorporating minimum power values will control the differences in power levels of DTV stations in the same market.^{12/} This will, in turn, limit differences in the power densities of strong and weak stations' signals in the field. Public Television is concerned that large disparities in the power densities of DTV stations in the same market will result in reception problems for weaker stations whose signals may simply be overwhelmed by those of higher powered stations. While it is theoretically possible to build DTV receivers that can receive signals with widely varying power densities, past experience suggests that, as a practical matter, there are limits to the degree of signal discrimination that can be built into an affordable consumer DTV set.^{13/}

In short, failure to incorporate minimum power values into the table of digital allotments will not only perpetually lock weaker UHF stations into small coverage areas, it may also shrink the area within which their viewers can receive a reliable signal. For these reasons, it is critically important to public television stations that the table of digital allotments adopted by the Commission in this proceeding incorporate minimum power values that will yield acceptable power ratios in all markets.

^{12/} For example, the Broadcasters' proposed table, which does not yet incorporate minimum power values, specifies power differences of 30 db or more between stations in the same market.

^{13/} In much the same way, it is possible to build an NTSC receiver capable of accommodating stations on adjacent channels in the same market but the likely expense of manufacturing such a receiver prompts the Commission to maintain strict rules on the spacing of stations that use adjacent channels.

3. The Replication Principle Should Be Coupled with a Maximization Principle.

While replication of existing coverage is important to assure that existing television viewers continue to have service, replicated coverage should be the minimum acceptable level of digital coverage, not the Commission's ultimate coverage goal. At this turning point in the development of broadcast television, the Commission should seize the opportunity to alleviate the coverage inequity between UHF and VHF stations. It would be very unfortunate if adherence to the replication principle ended up perpetuating the historic coverage disadvantage under which UHF stations have always operated.

In order to avoid that result, the Commission must couple the coverage replication principle with a coverage maximization principle. In addition to incorporating minimum power values in the table of digital allotments for those stations that currently operate with extremely low power,^{14/} there are at least two ways the Commission can assist UHF stations to maximize their coverage during and after the transition period.

First, both during and after the transition period, every DTV licensee should be permitted to expand its digital service area up to the maximum service area it could attain with the maximum height and power allowed for its NTSC facilities, without regard to any power and height limitations the Commission might adopt for DTV stations, provided the increase will not cause interference to another operating or authorized television station. This larger service area should be protected from interference caused by new DTV channels added to the table of digital allotments. This will allow DTV licensees to improve their facilities so

^{14/} See Section II.A.2 supra.

that UHF stations and other stations that currently operate with limited facilities can compete more effectively with other stations in their markets.^{15/}

Second, as an alternative to building facilities with the maximum height and power specified in the table of digital allotments -- which may be impractical in some instances due to cost or other considerations -- stations should be permitted to use boosters or translators to serve any portion of the DTV coverage area that could be served with maximum facilities, again provided that such facilities do not cause additional interference to other stations. Noncommercial stations in particular may not be able to afford the cost of operating at the high power levels needed to replicate their maximum analog coverage on their DTV channels. However, they may be able to serve areas that are currently within their Grade B contours (or that would be within those contours if they operated with maximum NTSC facilities) far more economically by using boosters or translators. This is particularly the case when terrain features obstruct service to certain areas.^{16/}

Although these coverage maximization measures would not completely eliminate the current coverage disparity between UHF and VHF stations, they would alleviate it, allow

^{15/} It would be reasonable to place some outer time limit on the period of time that DTV licensees will have to increase their DTV coverage to match their maximum permissible NTSC coverage. That period should end no sooner than a specified number of years (e.g., 5 years) after the transition period ends. Once the transition ends and NTSC service ceases, DTV licensees may well be able to increase their power or antenna heights above the levels that would have been possible during the transition without causing interference to nearby stations.

^{16/} Some public television licensees serve a substantial number of viewers who reside outside their Grade B contours and receive significant financial support from them. In at least one case, more than 50% of a station's contributing members live outside the station's Grade B contour. Such stations should not be foreclosed from serving those viewers when they convert to DTV.

stations to cover their markets more efficiently, and bring the benefits of digital television to a greater number of viewers.^{17/} Public Television urges the Commission to afford stations this extra latitude to expand their DTV coverage areas.

B. DTV Channels That Are Paired with Reserved Noncommercial NTSC Channels Should Also Be Reserved As Noncommercial Educational Channels.

The pairing of DTV channels with NTSC channels goes a long way towards assuring that noncommercial television service will be preserved in the digital era. But there is one additional step that the Commission should take when it adopts a table of digital allotments: DTV channels that are paired with reserved noncommercial NTSC channels should also be reserved as noncommercial educational channels.^{18/} Such reservations are necessary to ensure that digital channels paired with noncommercial NTSC channels are preserved for

^{17/} While Public Television believes that the two measures discussed above will be helpful to many stations, they are not substitutes for the incorporation of minimum power values in the initial table because stations can take advantage of them only if they do not cause additional interference. Only if the initial table of digital allotments is engineered to protect coverage contours of UHF stations operating at reasonable minimum power levels, as discussed in Section II.A.2, will there be any assurance that stations currently operating with relatively low power will be able to achieve reasonable coverage and acceptable power density.

^{18/} The noncommercial designation should not preclude use of a portion of the digital spectrum assigned to noncommercial licensees for auxiliary revenue-generating purposes, as long as the revenue is used to support the licensee's public telecommunications operations. See Public Television Comments on Fourth Further Notice of Proposed Rule Making filed November 20, 1995, at 7-8, 20-21. The Commission currently permits noncommercial stations to use their VBI and other ancillary spectrum for revenue generation. See Amendment of Parts 2, 73 and 76 of the Commission's Rules to Authorize the Offering of Data Transmission Services on the Vertical Blanking Interval by TV Stations, 101 FCC 2d 973, 981 (1985). It should treat the expanded programming distribution capacity afforded by DTV in a comparable manner.

noncommercial use in the community, even if the NTSC licensee does not apply for or construct its digital facility for any reason.

The reservation of specific television channels for noncommercial use has been an enduring feature of the Commission's spectrum allocation policy ever since it first allocated spectrum for television over 40 years ago, and has been considered necessary to provide "all possible encouragement and assistance for the development of educational television."^{19/} Congress made it clear when it enacted the Public Telecommunications Act of 1992^{20/} that it not only endorsed the long-standing public policy of reserving broadcast channels for noncommercial use, but believed that this policy should be extended to "all appropriate, available telecommunications distribution technologies."^{21/} Digital television was clearly on the Congressional radar screen when it made this pronouncement in 1992.^{22/}

For these reasons, Public Television urges the Commission to reserve all DTV channels that are paired with reserved NTSC channels in the table of digital allotments with a noncommercial designation to ensure that they are preserved for noncommercial use.

^{19/} See, e.g., Channel Assignment in Medford, Oregon, 3 FCC 2d 860, 863, recon. denied, 8 RR 2d 1531 (1966).

^{20/} Pub. L. No. 102-356, 106 Stat. 949 (Aug. 26, 1992) (codified as amended in scattered sections of 47 U.S.C. § 151 et seq. (1996)), reprinted in 1992 U.S.C.C.A.N. 839.

^{21/} See 47 U.S.C. § 396(a)(9) (1996). See also H.R. Rep. No. 363, 102nd Cong., 1st Sess. 18 (1991); S. Rep. No. 221, 102nd Cong., 1st Sess. 7 (1991).

^{22/} The Commission initiated this proceeding to foster the development of digital television service with a Notice of Inquiry released in 1987. See Notice of Inquiry in MM Docket No. 87-268, 2 FCC Rcd 5125 (1987).

C. The Commission Should Utilize the Full Broadcast Band for DTV Allotments During the Transition Period.

The Commission proposes to adopt a "core spectrum" approach under which allocations for DTV service would be concentrated in a portion of the current broadcast spectrum -- the 270 MHz band between NTSC channels 7 and 51. The Commission believes that these frequencies are most desirable for broadcasting from a technical perspective,^{23/} and hopes that concentrating DTV channels in this band will permit it to recover a portion of the broadcast spectrum and reallocate it for other purposes.^{24/} Although the Commission proposes to allocate some channels in the low VHF region (channels 2-6) and the high UHF region (channels 52-69), it nevertheless believes that it may be possible under its allotment plan to recover channels 60-69 "almost immediately," while protecting those full-service NTSC and DTV stations that would continue to operate in that spectrum.^{25/}

Public Television recognizes that there is a growing demand for spectrum and a corresponding need to ensure that the spectrum allocated for broadcast use be employed efficiently. Accordingly, it supports the Commission's ultimate objective of concentrating DTV service in a narrower band than is currently allocated to broadcast television and reallocating the remaining portion of the television spectrum for other purposes. But Public Television does not believe that the public interest would be well served by attempting to pack as many NTSC and DTV channels as possible into the spectrum below Channel 60 during the DTV transition period. Rather, for the reasons discussed below, the Commission

^{23/} Sixth Notice at ¶ 19.

^{24/} Id. at ¶ 25.

^{25/} Id.

should utilize the entire broadcast television band for NTSC and DTV service during the transition to DTV and, at the end of that transition, require DTV stations outside the core to move to channels within the core spectrum.^{26/} At that point, channels outside the core region will be cleared of broadcast licensees and can be reallocated for other purposes.

In their comments filed today, the Broadcasters compare their full band approach to the Commission's core spectrum approach.^{27/} The comparison reveals clear benefits of the full-spectrum approach, including reductions in interference to both NTSC and DTV stations and better replication of analog coverage.^{28/} Public Television supports the arguments made by the Broadcasters for the full spectrum approach, and focuses below on the benefits of the full spectrum approach that are of particular importance to public television.

1. The Full Spectrum Approach Will Afford More Opportunities for Coverage Maximization.

Use of the full spectrum during the transition period will have the important advantage of permitting many existing UHF licenses to increase their DTV service areas so as to close

^{26/} Public Television concurs with the Broadcasters that it is too early to conclude that the lower VHF and upper UHF channels are less suitable for digital broadcasting than the rest of the broadcast spectrum. As the Broadcasters observe, the laboratory and field tests conducted by the Advisory Committee on Advanced Television Systems found both the low VHF and high UHF spectrum entirely suitable for digital television, with the low VHF frequencies having the advantage of lower power requirements. See Broadcasters' Comments, Section III.B.2. Thus, while the Commission will undoubtedly be able to reallocate a portion of the broadcast spectrum at the end of the transition period, it would be wise to wait until the industry has some actual DTV operating experience before making a final decision on which frequencies should be reallocated.

^{27/} See Broadcasters Comments, Section III.B. Before making this comparison, the Broadcasters made certain corrections to the Commission's table to permit an "apples-to-apples" comparison. See id.

^{28/} See id.

-- or at least narrow -- the coverage gap between current UHF and VHF stations.^{29/} This is the case for two reasons. First, utilization of the full spectrum will permit the Commission to better incorporate minimum DTV power values for those NTSC stations that currently operate at relatively low power levels, without causing interference to or constraining the coverage of neighboring DTV stations.^{30/} Second, the ability of DTV licensees to expand their coverage beyond that permitted by the initial table of DTV allotments will necessarily be subject to the qualification that they not cause interference to neighboring NTSC and DTV stations.^{31/} Because utilization of the full broadcast spectrum will allow the Commission to engineer more space between the DTV channel allotments, it will, as a practical matter, afford many more opportunities for stations to increase their coverage in the future. As discussed above, the ability to expand coverage is of critical importance to noncommercial television stations, the great majority of which are UHF stations that have always been disadvantaged by inferior coverage.^{32/} Thus, coverage maximization is an important factor that the Commission must consider in comparing its core spectrum approach with the full-band approach proposed by the Broadcasters.

^{29/} See Broadcaster Comments, Section III.B.(1).

^{30/} See Section II.A.2 supra.

^{31/} See Broadcasters Proposed ATV Allotment/Assignment Approach, January 13, 1995, at 10; Section II.A.3 supra.

^{32/} See Section II.A.3 supra.

2. The Full Spectrum Approach Will Reduce the Adverse Impact of Digital Allotments on Noncommercial Translators.

There is another, equally compelling reason for the Commission to utilize the full broadcast band during the DTV transition period. Based on their engineering analysis, the Broadcasters predict that adoption of the Commission's proposed table of digital allotments and the proposed reallocation of channels 60-69 during the transition period would have a far more severe impact on translator and low power television stations than the Commission predicts.^{33/} The Broadcasters estimate that 2,048 translators and low power stations (about 25% of all those currently operating) would be displaced by the proposed DTV allotments and that another 1,475 stations would be displaced by the early reallocation of channels 60-69.^{34/} If the Broadcasters' proposed table of digital allotments were adopted, 63% fewer translators and low power stations would be displaced.^{35/}

Public Television's engineering studies show that adoption of the core spectrum approach during the transition would have a particularly devastating impact on noncommercial translators, which play a very important role in delivering noncommercial television service to millions of homes. Public television stations make extensive use of translator facilities to fill in white areas within their service areas and to extend service to rural, sparsely populated areas in an economical way. Currently 119 public television stations -- about one-third of all public television stations -- use 786 translators to carry their programming. Many of those

^{33/} The Commission estimates that 80-90% of all translators would be able to continue operating if it adopts its core spectrum allotment plan. Sixth Notice at ¶ 66.

^{34/} See Broadcasters' Comments, Section III.B.1.

^{35/} See id.

translators serve isolated areas where there is no other over-the-air television service and often no cable service. As noted above, state public television networks typically strive to provide service to their entire state without regard to the population density of any area. In many areas of the country, it is simply not practical to accomplish this with full service facilities. State public television networks thus frequently use translators as the only practical and economical means of providing public television service to sparsely populated areas. Other public television stations have also used translators to reach unserved areas outside their Grade B contours and to serve areas within their Grade B contours that cannot, due to terrain or other factors, receive a reliable signal. For example, stations KUED and KULC operate 110 translators to reach households in remote locations in the State of Utah.

While Public Television has not been able to conduct a comprehensive study of the impact of the Commission's core spectrum proposal on translator service, its engineering review, like that of the Broadcasters, indicates that the Commission's core spectrum approach will have a more severe impact on translator service in general and noncommercial translator service in particular than the Commission projects. About 25% of the 786 noncommercial translators operate on channels 60-69 and all of those translators would be displaced if the Commission reallocates those channels during the transition. Furthermore, the Commission's predictions fail to account for the devastating effect that its proposed DTV allotments and the reallocation of channels 60-69 would have on networks of translators in which one translator feeds others. For example, comments filed in response to the Sixth Notice by noncommercial stations KUED and KULC show the effect of the Commission's allotment plan on the 110 translator stations that they operate in the State of Utah, which serve 20% of the state's

population and 80% of the state's area. Because many of those translators are fed by other translators, the loss of a single translator may have a "domino effect," causing a loss of service to all of the translators fed by a displaced translator. Thus, the effect of the loss of a single translator may be magnified several-fold. In the case of KUED and KULC, noncommercial television service would be lost in large portions of the State of Utah.^{36/}

Although some translators would be affected by DTV allotments even if the full-spectrum plan were adopted, that impact would be much less severe. First, many translators could continue operating on channels 60-69 during the transition. Second, those translators that are displaced would have a much greater chance of finding suitable replacement channels during the transition because there would be more vacant channels available and fewer displaced translator and low power stations searching for replacement channels. Third, by the end of the transition period, a substantial number of channels will become available as NTSC stations relinquish their channels, and those channels could then be made available to translators that are displaced as a result of the reallocation of a portion of the broadcast band.^{37/} In contrast, under the Commission's core spectrum plan, translators would be displaced from channels 60-69, as well as channels in the core spectrum that are allocated for DTV, and their opportunities to relocate during the transition would be substantially curtailed because full-service NTSC and DTV stations would be packed so tightly in the core spectrum.

^{36/} Attached hereto as Exhibit 2 is the Declaration and Statement of Fred C. Esplin, which contains a summary prepared by KUED and KULC of the effect of the DTV channel allotments and spectrum recovery plan proposed by the Commission on their 110 noncommercial translators. Maps attached to that summary show the severe impact of those proposals.

^{37/} See Section VI infra.

3. The Full Spectrum Approach Will Afford NTSC and DTV Licensees Greater Flexibility to Modify Their Facilities As Necessary During the Transition Period.

As the Broadcasters demonstrate in their Comments, both NTSC and DTV licensees will need a great deal of flexibility to modify their facilities during the transition period.^{38/} Changes in NTSC facilities may necessitate corresponding changes in DTV facilities, and some stations may simply be unable to build their DTV facilities with the precise engineering parameters contemplated by the table of digital allotments.^{39/} Moreover, many stations may wish to make changes in their DTV facilities to improve service to their communities once they have some actual DTV operating experience. The full spectrum approach will afford stations considerably greater flexibility than the core spectrum plan to make necessary modifications to their DTV and NTSC facilities during the transition period.

4. The Full Spectrum Approach Will Diminish Pressure to Delete Vacant Noncommercial Allotments.

Finally, adoption of the full spectrum approach will diminish the pressure to delete vacant NTSC noncommercial allotments. As discussed below,^{40/} the Commission feels compelled under the core spectrum approach to delete all vacant NTSC allotments, including those reserved for noncommercial use. Utilization of the full spectrum for digital allocations during the transition will diminish the pressure to depart from the long-standing Congressional and Commission policy protecting the structural integrity of the noncommercial channel

^{38/} See Broadcasters Comments, Sections III.B.1. and V.

^{39/} See *id.* Stations may be unable to build facilities with the parameters specified in the table for a variety of reasons, ranging from zoning restrictions to the incapacity of an existing tower to support another antenna.

^{40/} See Section II.D. *infra*.